REMARKS/ARGUMENTS

Claim Rejections Under 35 U.S.C. § 103

5   Claims 1-7 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Ginzburg (US 20050053037 (hereinafter "Ginzburg") in view of Trainin (US 20040120292) (hereinafter "Trainin").   Applicant respectfully traverses these rejections.

Independent claim 1 recites:

10   A method for transmitting a MAC service data unit (MSDU) in a network system, the MSDU having a plurality of pieces of frame data, the method comprising:

receiving the pieces of frame data of the MSDU; and

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converting the received pieces of frame data into a MAC protocol data unit (MPDU) and outputting the MPDU, wherein for at least one of the plurality of pieces of frame data, ***converting* begins prior to having received *all* of the plurality of pieces of frame data of the *MSDU***.

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(Emphasis added.)

The Office argues that Ginzburg teaches all the limitations of claim 1 except "wherein for at least one of the plurality of pieces of frame data converting begins

25   prior to having received all of the plurality of pieces of frame data of the MSDU".

The Office has looked to Trainin to remedy the deficiencies of Ginzburg. The Office argues that Trainin would show "wherein for at least one of the plurality of pieces of frame data converting begins prior to having received all of

30   the plurality of pieces of frame data of the MSDU" by referring to paragraph 36 of Trainin and making the statement "e.g. one slot at a time". While applicant has

already pointed out in the reply to the last Office Action that he can not see how this text passage could possibly show this limitation, the current Office Action still brings no clarification on this issue for the applicant. It is totally unclear for the applicant what the Office means by "e.g. one slot at a time" in view of the text in

5   paragraph 36 of Trainin and how this should show the limitation as asserted by the Office.

Paragraph 36 of Trainin describes to send a frame only when received data has not been present on the air interface for a particular time interval, referred to

10   as the Interframe Space. However, ACK should be sent without listening after a time interval, referred to as Short IFS (SIFS). In some cases, a device may be required to wait longer time periods such as a Priority IFS (PIFS) which is the SIFS plus one slot time, Distributed IFS (DIFS), which is the SIFS plus two slot times, and an Extended IFS (EIFS), which is much larger than any of the other

15   intervals. Other waiting periods also could be implemented." The above text passage therefore describes the existence of waiting time periods in order to avoid conflicts with transmission from other stations and that the waiting time period can be different, for example for the more important ACK the waiting time is short in order to provide a high probability that the ACK reaches the addressed

20   station.

However, this passage does not at all relate to a converting of pieces of frame data of a MSDU to the receiving of these same pieces of frame data of MSDU such that the converting begins prior to having received **all of the plurality of**

25   **pieces of frame data** of this same <u>MSDU</u>. Just in order to make sure the Office understands the claim limitation of claim 1 in a correct way, Applicant points out here that the claim limitation *"converting* the received pieces of frame data into a MAC protocol data unit (MPDU) and outputting the MPDU, wherein for at least one of the plurality of pieces of frame data, *converting* begins prior to having

30   received *all* of the plurality of pieces of frame data of the *MSDU* " uses MPDU as well as MSDU and that these two should not be mixed up when looking at the

claim.

Paragraph 36 only describes sending of ACK frames. ACK frames however are control response frames and therefore do not include frame data of a MSDU.

5 Trainin (see Paragraph 3 first sentence) explicitly distinguishes between response frames (ACK, see Paragraph 4 last sentence) and frames sent from a source to the destination which are the frames transmitting the MPSU data. Moreover, Paragraph 36 even fails to show the converting of pieces of frame data or any other converting. ACK frames are not converted from MSDU data. Moreover, this

10 passage teaches to wait a time interval (SIFS) and then send the ACK without listening to traffic on the air. In other cases, i.e. when no ACK is sent, the device listens for a period of time (IFS) and then sends the frame. However none of these cases show

- any kind of converting

15 - any kind of converting frame data of a received MSDU data into MPDU (it is pointed out here that converting frame data of a received MSDU into MPDUs is only done in the transmission process when the received MSDU is intended to be wirelessly transmitted, see Ginzburg paragraph 11. When a whole MSDU is

20 received and the MSDU data is not further transmitted wirelessly, the MSDU data are of course not converted into MPDUs. Ginzburg provides examples when an MSDU is converted into MPDUs for example when the wireless transmission is noisy or collisions occur.)

25 - any kind of relation of the beginning of converting to previously receiving

Trainin teaches that a response should be sent as quickly as possible upon expiration of an IFS, see Paragraph 48, line 4. This is because if another station

30 starts transmitting, collision would occur and if the response frame is not received in time, retransmission may start, see Paragraph 46. For ACK response frames the

IFS is the shortest of all IFS (SIFS = short IFS) compared to other IFS and distinguished from other frames ACK response frames are sent <u>always</u> after the SIFS without listening whether traffic occurred during the IFS or not. However, since the SIFS is short and since the response frame needs to wait for the

5   validation and control of the PLCP Header, for the SIFS which is the shortest waiting time interval, the necessary validation and control processes may take too long so that it may be impossible to transmit the response frame immediately upon expiration of the IFS, see paragraph 49 and 50. It is to be noted that this is particular a problem of the response mechanism.   It is clear therefore that

10   Trainin's teaching is only related to response frames.

It is also pointed out that Trainin describes the process of fragmenting similar to the fragmenting described in Ginzburg, see Paragraph 67. However, Trainin does not teach in the whole document to begin a conversion of the "entire

15   message" into fragments at a time prior to having received the entire message. **If Trainin would have had this teaching as asserted by the Office he would have stated it somewhere in the document** for example in Paragraph 67 by describing for example that when sending the entire message in fragments the conversion of the entire message into fragments could start at least for one MPDU prior to

20   having received the entire message. **However, Trainin is totally silent about any time relation of the when "fragments" of data are included into a data frame and when this including into the data frame starts. Trainin's intention is only related to provide a quick generation of response frames for acknowledging the receiving of frames or transmitting a CTS as outlined above.** This can be

25   also seen from Paragraphs 51-57 which relate only to sending response frames. Only exemplary it is pointed to Paragraph 54 "…when an appropriate <u>response frame</u> should be issued" Paragraph 55 "…to issue a <u>response</u>…" Paragraph 56 "…of the <u>response</u> frame, and preparing and releasing the data portion of the <u>response</u> frame…". Again it is pointed out, that a response does not contain

30   MSDU data of the received frames which is acknowledged by the response.

The Office refers on page 6 of the Office Action to an acknowledgement with fragmentation which according to the Office is described in Paragraph 67 and 33 of Trainin. Applicant carefully considered these text passages but was unable to find any disclosure which could possibly show the claim limitation *"converting*

5   the received pieces of frame data into a MAC protocol data unit (MPDU) and outputting the MPDU, wherein for at least one of the plurality of pieces of frame data, *converting* begins prior to having **received *all* of the plurality of pieces** of frame data of the *MSDU"* from Paragraphs 67 and 33. Paragraph 67 as described earlier shows the fragmentation of an entire message and the sending of an

10   acknowledgement for each fragment when received at the receiver. However, it is to be pointed out that it is not described at what time the including of fragments in relation to the receiving of the entire message starts. Also Paragraph 33 brings no clarification. Paragraph 33 only describes fields of the PLCP header and that a PLCP Header Integrity Control field is used to check the integrity of the PLCP

15   header. Therefore, applicant can not see what the Office wants to show by referring to Paragraphs 67 and 33 and how this would show the claim limitation.

Overall, it becomes clear that Trainin neither explicitly or implicitly shows a <u>transmission</u> of an MSDU wherein a beginning of a conversion of the pieces of

20   frame data into MPDUs is related to the receiving of all pieces of frame data of the MSDU and in particular not such that the conversion begins prior to having received all of the plurality of pieces of frame data of the MSDU. Trainin in fact describes fragments of the entire message instead of an entire message are included in a data frame in paragraph 67 but fails to describe any teaching at what

25   time this including is done and in particular at what time in relation to the receiving of all frame data of the entire message is done. The person skilled in the art would have no motivation to modify the breaking of frames into fragments described in Paragraph 11 of Ginzburg since Trainin already describes the including of fragments in Paragraph 67 without mentioning anything on the

30   beginning of the including.

In a telephone interview with the Examiner, Patent Agent Scott Margo (Registration Number 56,277) spoke with the examiner about the rejection of claim 1. Regarding the claimed feature of "*converting* begins prior to having received *all* of the plurality of pieces of frame data of the *MSDU*", the Examiner

5   stated that Trainin teaches this feature in paragraphs 67, 71, and 74. However, despite the Examiner's insistence that these paragraphs teach the claimed feature, Mr. Margo and the applicant are unable to find relevant teachings in these paragraphs, and do not agree with the Examiner's citation of these paragraphs for rejecting the claimed limitation. Therefore, even after re-reading   paragraphs 67,

10   71, 74, the other paragraphs cited by the Examiner, and all other surrounding paragraphs of Trainin, the applicant has still not seen anything that supports the Examiner's rejection of Trainin teaching receiving **all** of the plurality of pieces of frame data before conversion begins.

15   **Dependent claims 2 and 3** depend from claim 1.   The rejection with regard to these claims should be withdrawn by virtue of the dependency.   Moreover, these claims recite features that, when taken together with those of claim 1, are not disclosed by Ginzburg and Trainin.

20   **Independent claim 4** recites:

A network device comprising:

an I/O interface to receive a MAC service data unit (MSDU) which has a

25   plurality of pieces of frame data;

a buffer to store the pieces of frame data received by the I/O interface; and

a control circuit to control operations of the network device and to convert the

30   pieces of frame data stored in the buffer into MAC protocol data units (MPDUs);

wherein the control circuit is configured to begin converting of at least one received piece of frame data into corresponding M**PDU** prior to having received **all** of the plurality of pieces of frame data of the MSDU.

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(Emphasis added)

The Office argues that similar to claim 1 a combination of Ginzburg and Trainin would teach the limitations of claim 4. Applicant respectfully traverses this assessment since a combination of Ginzburg and Trainin can not show all limitations of claim 4 for the same reasons as outlined for claim 1.

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Independent claim 7 recites:

A device comprising:

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an interface to receive a MAC service data unit (MSDU), the MSDU comprising a plurality of pieces of data;

a controller to convert the plurality of pieces of data into MAC protocol data units (MPDU), the controller being configured to begin converting at least one received piece of data into corresponding MPDU prior to having received **all** of the plurality of pieces of data of the MSDU.
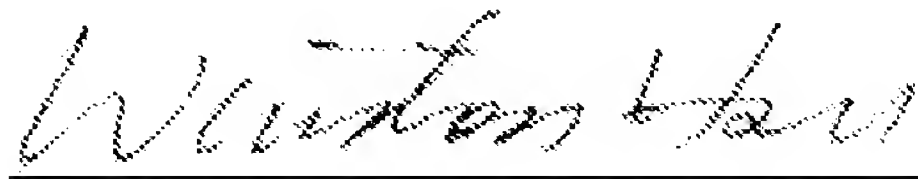
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The Office argues that similar to claim 1, a combination of Ginzburg and Trainin would teach the limitations of claim 7. Applicant respectfully traverses this assessment since a combination of Ginzburg and Trainin can not show all limitations of claim 7 for the same reasons as outlined for claim 1.

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In accordance with the foregoing, Applicant respectfully requests reconsideration and withdrawal of the 35 U.S.C. § 103(a) rejections.

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Conclusion

   In accordance with the foregoing remarks, Applicant believes that the pending claims are allowable and the application is in condition for allowance. Therefore, a Notice of Allowance is respectfully requested.   If the Examiner

5 maintains his rejections of the claims, the applicant respectfully requests that each of the above points of the applicant's remarks be fully addressed so that the record can be as clear as possible before an appeal is filed. Should the Examiner have any further issues regarding this application, the Examiner is requested to contact the below-indicated attorney.

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Sincerely yours,

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